

## **REMARKS**

In the Office Action dated June 19, 2007, claims 1, 2, 4-9, 13, 14, 16-21, 25-27, 28, 29 and 31-36 were rejected under 35 U.S.C. §102(b) as being anticipated by Obel et al. Claims 3, 15 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Obel et al. Claims 11, 12, 23, 24, 38 and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Obel et al. in view of Jensen et al. Claims 10, 22 and 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over Obel et al. in view of Hill et al.

These rejections are respectfully traversed for the following reasons.

In the heart monitoring device of independent claim 1, the heart monitoring system of independent claim 13, and the heart monitoring method of independent claim 28, a first sensor is used to sense at least one constituent of blood in a subject, and at least one further sensor is used to sense activity of the heart of the subject. The heart activity signal is used to identify first and second portions in the same heart cycle of the subject. Once these first and second portions of the heart cycle are identified, the blood constituent signal is then evaluated to identify a first value of that signal that occurs in the first portion of the heart cycle and a second value of that signal that occurs in the second portion of the heart cycle.

Therefore, in the subject matter disclosed and claimed in the present application, it is not only important for a blood constituent value to be identified in each of the first and second portions of the heart cycle, but also it is important to know that the first value has actually occurred in the first portion of the heart cycle, and the second value has actually occurred in the second portion.

In the Obel et al. reference, although a pH signal is obtained from the blood of a patient, as well as an oxygen saturation signal, there is no particular correlation of the values of either of those respective signals with the timing of the ECG signal that is also obtained.

In view of the manner by which the independent claims of the present application were originally written, the Examiner may have believed it was sufficient that in the Obel et al. reference, since the pH signal and the SO<sub>2</sub> signal are (or can be) continuously or quasi-continuously obtained, this will necessarily mean that some of the values of those signals will have been obtained in one portion of a heart cycle while other values of those signals will have been obtained in another portion of the heart cycle. While this may be the case, in the Obel et al. reference there is no *identification* or correlation of which values of the pH signal or the SO<sub>2</sub> signal occur in different portions of the heart cycle. As noted above, in the subject matter disclosed and claimed in the present application, it is not sufficient merely for different values of the pH signal or the SO<sub>2</sub> signal to have been obtained in different portions of a heart cycle, it is important to actually know or identify a value as having been obtained in an identifiable portion of the heart cycle, and another value of that signal as having been obtained in a different portion of the same heart cycle. Claim 1 has been amended to make this clear.

Claim 1 also has been amended to make clear that an output signal is emitted that is indicative of functioning of the heart, the output signal being dependent on a relationship between the aforementioned first and second values. This is why it is important to know which values were obtained in which portion of the heart cycle.

Such an identification of the different portions of a heart cycle in which pH values or SO<sub>2</sub> values were obtained is not disclosed or suggested in the Obel et al. reference.

The Obel et al. reference, therefore, does not anticipate any of independent claims 1, 13 or 28, or any of the dependent claims respectively depending therefrom.

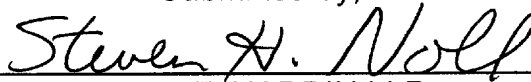
Moreover, Applicant submits that none of claims 3, 15 or 30 would have been obvious to a person of ordinary skill in the field of designing cardiac monitoring devices and systems based on the teachings of Obel et al., under the provisions of 35 U.S.C. §103(a). As noted above, the Obel et al. reference does, in fact, disclose obtaining two different physiological signals, namely a pH signal and an SO<sub>2</sub> signal, and also discloses obtaining an ECG signal. As also noted above, there is no teaching or suggestion at all in the Obel et al. reference to correlate either of the pH signal or the SO<sub>2</sub> signal with the ECG signal, and therefore the Obel et al. reference does not disclose or suggest specifically identifying which portions of a cardiac cycle in which respectively different values of those physiological signals are obtained. The inventors in the Obel et al. reference, therefore, had all of this information at their fingertips, but failed to make use of the information in the manner disclosed and claimed in the present application. This is a hallmark of non-obviousness under the analysis mandated in *Graham v. Deere*. When those of ordinary skill in the same technology have the same information available to them as the present inventor, but clearly fail to provide any teaching whatsoever regarding the insight that the present inventor has had to make use of that information in the claimed manner, this is strong evidence of the non-obviousness of the subject matter of the independent claims of the present application, which is embodied in each of claims 3, 15 and 30.

Similar arguments are applicable to the rejection of claims 11, 12, 23, 24, 38 and 39 under 35 U.S.C. §103(a) based on Obel et al. and Jensen et al., and the rejection of claims 10, 22 and 37 under 35 U.S.C. §013(a) based on Obel et al. and Hill et al. Even if the Examiner's statements concerning the respective secondary references are correct, modifying the Obel et al. reference in accordance with the teachings of either of those secondary references still would not result in the subject matter of any of those dependent claims, for the reasons discussed above in connection with the independent claims.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519.

Submitted by,

 (Reg. 28,982)

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